

In the Claims

Please amend Claims 1, 5, 7, 10-11, 21-25, and 27 as follows:

A1

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1. A sample preparation apparatus comprising a support, a microscope, a pattern-recognition assembly, a milling laser, and a sample of interest.
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A2

5. The apparatus of claim 1, wherein the sample is a silicon wafer.
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A3

7. The apparatus of claim 6, further comprising a focused ion beam source for thinning the sample, and a transmission electron microscope for analyzing the sample, and a bracket for supporting the transmission electron microscope and focused ion beam source.
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A4

10. The apparatus of claim 8, further comprising probes mounted on the bracket for mating with the holes on the block and for holding the block on its side on the bracket, and twin stylus on the bracket for engaging and lifting the block from the sample, transferring to the holder for thinning with the focused ion beam source and transferring to the transmission electron microscope for inspection and analysis without contamination of the block.
11. A sample preparation method comprising providing a sample wafer of interest on a support, cutting and extracting a desired nano-level portion from the wafer with a laser, holding and protecting the portion with a holder, placing the portion inside a focused ion beam source, thinning an area of interest on the portion with the focused ion beam source, and transferring the portion with the area of interest to a transmission electron microscope and analyzing the portion with the transmission electron microscope.
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A5

21. The method of claim 18, wherein the moving comprises moving an arm with dual stylus of the micro-manipulator, engaging ends of the milled portion, extracting the cut block from the wafer, placing the block in a transmission electron microscope holder tip of a transmission electron microscope holder.
 22. The method of claim 21, further comprising finishing and thinning the sample strip by a focused ion beam source.
 23. The method of claim 22, further comprising rotating the block by about 90° with the transmission electron microscope holder and transferring the block to a transmission electron microscope for analysis.
 24. The method of claim 23, further comprising turning the area of interest on its edge, inspecting and analyzing the area of interest with the transmission electron microscope.
 25. The method of claim 16, wherein the milling the block comprises forming a block of desired shape containing the sample strip in a selected area, forming the sample strip thinner than the block, and inspecting the sample strip with a transmission electron microscope.
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A6

27. The method of claim 26, further comprising fitting focused ion beam source and transmission electron microscope instruments on the bracket for automatically receiving the block without any contamination.
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